Instructor: Dr. Neal Chesnut and Dr. Logan Leslie

Office Hours: Dr. Chesnut (Boyd Bldg. 217)
Monday/Wednesday/Friday: 9:55 - 10:45am (Boyd206),
Monday/Wednesday: 2:25 - 3:15pm (Boyd206), 3:15 - 4:30
Friday: 2:15 - 3:30
Phone/Email: (678) 839-4094/nchesnut@westga.edu

Office Hours: Dr. Leslie (TLC 2115)
Monday/Wednesday: 9:50-10:50 am and 12:30-1:30 pm, Tuesday: 9-11:30 am,
Thursday: 1-3:00 pm, and Friday: 1-2:00 pm
Phone/Email: (678) 839-6067/lleslie@westga.edu

Class Days/Time/Location: MWF, 8:50 – 9:40 am (Education Annex A, Room 170)

Textbooks: Research Methods for Science, by Michael P. Marder and Surely You’re Joking Mr. Feynman, by Richard P. Feynman are both required texts.

Course Description and Objectives: Research Methods is a one-semester, three-hour course in the required UTeach sequence. It is one of several content courses specially designed to meet the needs of future teachers (others include Perspectives on Science and Mathematics and Functions and Modeling). The course is cross-listed in Physics, Chemistry, Math, Geology, and Biology. This course also meets Discipline Specific Writing Requirements (DSW), https://www.westga.edu/dsw.

Course Objectives: Students will be able to...

- create their own experiments to answer scientific questions.
- design experiments to reduce systematic and random errors and use statistics to interpret the results.
- use probes and computers to gather and analyze data.
- use statistics to interpret experimental results and deal with sampling errors.
- treat human subjects in an ethical fashion.
- apply safe laboratory procedures.
- find and read articles in the scientific literature.
- create mathematical models of scientific phenomena.
- apply scientific arguments in matters of social importance.
- write scientific papers.
- give oral presentations of scientific work.
Pre-requisites: In order to be enrolled in this course, you must have taken and passed the Step 1 and Step 2 courses (UTCH 2001 and 2002). Additionally, you are encouraged to take at least Pre-calculus (MATH 1113) before taking this class.

Course Policy and Evaluation:

Attendance and Participation: The class will meet three days a week. Regular attendance at all class meetings is expected. Some course topics will be covered only in class. Students will be held responsible for informing themselves of all announcements and assignments made in the classroom. Students must advise the instructor in writing during the first week of class of any scheduled athletic, music, or other college activities that will require their absence during the semester. Such written notice does not imply a waiver of course requirements. Permission to make up a missed exam after the fact will be at the discretion of the instructor. Part of the grade in this course will depend on class participation, including working in groups in class and asking questions during presentations.

Homework: Homework assignments from the Research Methods textbook will be assigned on a regular basis. Late homework may be accepted by the instructor with some loss of points. Please make sure that your homework is legible, well-organized, and shows all equations and steps involved in solving the problem. The homework should be written in pencil, and multiple pages should be stapled.

Reading: A reading assignment will be given regularly. In order to participate fully in class, you will need to have read the assignment ahead of time.

Inquiries: In this class you will design and carry out four independent inquiries, which you will have to write up and present in the manner that is common in the scientific community. The inquiries incorporate mathematics and the various science disciplines. A large portion of the class grade will depend on the inquiry write-ups and presentations. Grading for each of the inquiries will depend on a rubric. Each rubric will be posted on CourseDen, and is included in Appendix D of the Research Methods textbook.

Presentations: For Inquiries 2 and 4, in addition to writing a report, you will also have to give a short presentation. Additionally, you will be expected to do a literature search on a controversial topic in science, and give a presentation on that subject.

Academic Honesty: While students are encouraged to cooperate as they learn, study, and do homework, the final product—be it a test, lab report, or homework assignment—is expected to be the individual work of the student. Cheating (False representation of another’s work as one’s own) will not be tolerated, and the repercussions of cheating will range from receiving a zero on that assignment or test, to receiving a failing grade in the course.

Cell Phones: Disrupting class is discourteous to both the instructor and the rest of the class. Please silence your cell phone before the beginning of class. Cell phones may NOT be used for any reason during tests, and must be turned off and put away during the test.

Extra Credit: Given the volume of work that you are already expected to do in this course, doing additional work for extra credit is not realistic.
**TK20:** If you do not already have one, you must get a subscription to the TK20 electronic portfolio system as a part of this course. If you have subscribed previously, your subscription lasts for 10 years.

**Students with Special Needs:** If you need special accommodations, you are encouraged to meet with me as soon as possible to discuss them.

**Incompletes:** A grade of incomplete will only be given when course requirements are not completed due to circumstances beyond the control of the student.

**University-Wide Policies:** You are expected to be familiar with all of the information and requirements of university policy. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester. All university-wide policies can be found at: [http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf](http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf)

**Evaluation:**

- Participation Grade: 10%
- Homework: 25%
- Inquiry 1: 5%
- Inquiry 2 Proposal: 2%
- Inquiry 2 Draft: 3%
- Inquiry 2 Presentation: 3%
- Inquiry 2 Final Write-Up: 10%
- Inquiry 3 Write-Up: 10%
- Inquiry 4 Proposal: 2%
- Topic Presentation: 5%
- Inquiry 4 Draft: 5%
- Inquiry 4 Presentation: 5%
- Inquiry 4 Final Write-Up: 15%

Final grades will be assigned according to the following scale:

- A 90-100
- B 80-89
- C 70-79
- D 60-69
- F < 60

**Grades:** Students are welcome to check their most recent grades anytime with the professor.
## Tentative Course Schedule

<table>
<thead>
<tr>
<th>Week Beginning</th>
<th>Chapter(s)</th>
<th>Material Covered</th>
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</thead>
<tbody>
<tr>
<td>Aug. 15</td>
<td>Syllabus</td>
<td></td>
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<tr>
<td>Aug. 29</td>
<td>Inquiry 1 Due</td>
<td></td>
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<tr>
<td>Sept. 10</td>
<td>Inquiry 2 Proposal</td>
<td>Due</td>
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<tr>
<td><strong>Sept. 3</strong></td>
<td><strong>Labor Day</strong></td>
<td><strong>No classes</strong></td>
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<tr>
<td>Sept. 26</td>
<td>Inquiry 2 Draft Due</td>
<td></td>
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<tr>
<td>Sept. 28-Oct. 8</td>
<td>Inquiry 2 Presentations</td>
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<tr>
<td>Oct. 8</td>
<td>Inquiry 2 Final Draft Due</td>
<td></td>
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<tr>
<td><strong>Oct. 4-5</strong></td>
<td><strong>Fall Break</strong></td>
<td><strong>No Class</strong></td>
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<tr>
<td>Oct. 22</td>
<td>Inquiry 3 Write-Up Due</td>
<td></td>
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<tr>
<td>Oct. 24</td>
<td>Inquiry 4 Proposal Due</td>
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<td>Nov. 12, 14, &amp; 16</td>
<td>Topic Presentations</td>
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<tr>
<td>Nov. 28</td>
<td>Inquiry 4 Draft Due</td>
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<tr>
<td><strong>Nov. 19 – 23</strong></td>
<td><strong>Thanksgiving</strong></td>
<td><strong>No Classes</strong></td>
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<tr>
<td>Nov. 30 - Dec.7</td>
<td>Inquiry 4 Presentations</td>
<td></td>
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<tr>
<td>December 7</td>
<td>Inquiry 4 Final Report Due (by noon)</td>
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Students, please carefully review the following information at this link [http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf]. It contains important material pertaining to your rights and responsibilities in this class. Because these statements are updated as federal, state, and accreditation standards change, you should review the information each semester.